

**PHASE DETECTOR SYSTEM WITH ASYNCHRONOUS OUTPUT
OVERRIDE**

5

Abstract

In one embodiment, the present invention provides a phase-locked loop comprising a charge-pump loop filter and a phase detector system. The charge-pump loop filter is configured to provide a control voltage having a voltage level based on a state of a first control signal and on a state of a second control signal.

10 The phase detector system is configured to receive a first clock, a second clock, and a control signal defining a plurality of states including a first state and a second state. The phase detector system is further configured to provide the first control signal and the second control signal each having a state based on a phase difference between the first and second clocks when the control signal has the

15 first state, and to provide the first control signal and second control signal each having a state asynchronously controlled by the control signal when the control signal has the second state.